UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,301	01/27/2004	Terrence C. Leslie	303.860US1	9293

21186 7590 10/31/2007

SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER	
LANDAU, MATTHEW C	
ART UNIT	**PAPER NUMBER**
2815	

MAIL DATE	DELIVERY MODE
10/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary	Application No.	Applicant(s)	
	10/765,301	LESLIE, TERRENCE C.	
	Examiner	Art Unit	
	Matthew C. Landau	2815	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Matthew C. Landau*. (3)_____.

(2) *James Baillargeon*. (4)_____.

Date of Interview: *25 October 2007*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *77 and 85*.

Identification of prior art discussed: *none*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Applicant discussed a proposed amendment to the claims (see attached). The proposed amendement appears to overcome the outstanding 112,2nd paragraph rejections. Any amendment will be fully considered when formally submitted*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Proposed Amendments to the Claims of U.S. Application No.10/765,301

77. (Currently Amended) A vertical memory cell, comprising:

a substantially planar surface;

~~an access device including a mesa, the mesa formed partly within an annular depression and extending outwardly from the planar surface~~;

a first ~~and a second~~ insulator ~~forming a portion of the annular depression~~ adjacent the planar surface,

a second insulator spaced apart from the first insulator, wherein an annular depression is formed in the first insulator and the second insulator;

an access device including a mesa, the mesa formed partly within the annular depression and extending outwardly from the planar surface;

a buried conductive path bounded by the first insulator and [[a]] the second insulator, the buried conductive path enclosing a section of the mesa, the mesa circumferentially contacting the buried conductive path at a specified radius along a vertical sidewall region of the mesa above the first insulator, wherein a portion of the mesa extending radially inward from the buried conductive path and extending vertically along the buried conductive path between the first insulator and the second insulator consists essentially of dopant atoms of one conductivity type, and wherein the dopant atoms in the portion form with a diffused concentration profile in the radial direction; and

a storage device on the mesa.

78. (Original) The memory cell of claim 77, wherein the first and the second insulators are configured to permit current in the buried conductive path to flow into the mesa only across the specified radius.

79. (Original) The memory cell of claim 77, wherein the annular depression is formed with a uniform radius.

80. (Original) The memory cell of claim 77, wherein the annular depression is formed having the specified radius.

81. (Original) The memory cell of claim 77, wherein the buried conductive path contacts the mesa along the circumference only between the first and the second insulators.

Proposed Amendments to the Claims of U.S. Application No.10/765,301

82. (Original) The memory cell of claim 77, wherein the buried conductive path is a bit line conductor.

83. (Currently Amended) The memory cell of claim 77, wherein the mesa electrically contacts the buried conductive path only ~~at the specified radius~~ along the vertical sidewall region above the first insulator.

84. (Original) The memory cell of claim 77, wherein the mesa includes a diffused dopant concentration profile in a vertical region configured to contact the storage device.

85. (Currently Amended) A vertical memory cell, comprising:

a substantially planar surface;

~~an access device including a mesa, the mesa formed partly within an annular recess and extending outwardly from the planar surface;~~

a first ~~and a second~~ insulator adjacent the planar surface ~~used to form a portion of the annular recess~~;

a second insulator spaced apart from the first insulator, wherein the first insulator and the second insulator are used to form a portion of the annular recess;

an access device including a mesa, the mesa formed partly within the annular recess and extending outwardly from the planar surface;

a buried conductive path confined by the first insulator and the second insulator, the buried conductive path enclosing a section of the mesa, the mesa circumferentially contacting the buried conductive path at a specified radius along a vertical sidewall region of the mesa above the first insulator, wherein a portion of the mesa extending radially inward from the buried conductive path and extending vertically along the buried conductive path between the first insulator and the second insulator consists essentially of dopant atoms of one conductivity type, and wherein the dopant atoms in the portion arrange in an abrupt concentration profile in the radial direction; and

a storage device on the mesa.

Proposed Amendments to the Claims of U.S. Application No.10/765,301

86. (Original) The memory cell of claim 85, wherein the first and the second insulators are configured to permit a voltage transmitted along in the buried conductive path to couple to the mesa only at the specified radius.

87. (Original) The memory cell of claim 85, wherein the annular recess is formed with a specified radius.

88. (Original) The memory cell of claim 85, wherein the annular recess is formed having the specified radius.

89. (Original) The memory cell of claim 85, wherein the buried conductive path contacts the mesa only along the circumference between the first and the second insulators.

90. (Original) The memory cell of claim 85, wherein the buried conductive path is a bit line conductor.

91. (Currently Amended) The memory cell of claim 85, wherein the mesa is configured to electrically contact the buried conductive path only ~~at the specified radius~~ along the vertical sidewall region above the first insulator.